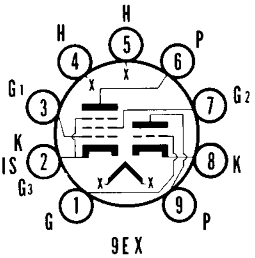


SYLVANIA TYPES 6HC8 17HC8



TRIODE-PENTODE

The 9-T9 design utilized a T-9 ($1\frac{1}{8}''$ Dia.) bulb based to fit a standard 9-pin miniature socket. Advantages of the 9-T9 include an increase in the heat dissipation safety margin, as compared to 9-pin miniature tubes employing T-$6\frac{1}{2}$ ($\frac{13}{16}''$ Dia.) bulbs.

MECHANICAL DATA

Bulb	Special, T-9
Base	9-Pin, Same as E9-1, except Bulb Diameter
Outline	See Drawing
Basing	9EX
Cathode	Coated Unipotential
Mounting Position	Any

ELECTRICAL DATA

HEATER CHARACTERISTICS

	6HC8	17HC8
Heater Voltage	6.3[1]	16.8 Volts
Heater Current	1200	450[2] Ma
Heater Warm-up Time[3]	—	11 Seconds
Maximum Heater Voltage Range[4]	5.7-6.9	— Volts
Maximum Heater Current Range[4]	—	420-480 Ma
Heater-Cathode Voltage (Design Maximum Values)[4]		
Heater Negative with Respect to Cathode		
Total D C and Peak	200	200 Volts Max.
Heater Positive with Respect to Cathode		
D C	100	100 Volts Max.
Total D C and Peak	200	200 Volts Max.

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

Triode Section	
Grid to Plate	4.4 $\mu\mu f$
Input: g to (h+Tk+Pk, g3, I.S.)	3.0 $\mu\mu f$
Output: p to (h+Tk+Pk, g3, I.S.)	2.6 $\mu\mu f$
Pentode Section	
Grid No. 1 to Plate	0.2 $\mu\mu f$ Max.
Input: g1 to (h+Pk, g3, I.S., +g2)	10 $\mu\mu f$
Output: p to (h+Pk, g3, I.S., +g2)	8 $\mu\mu f$

RATINGS (Design Maximum Values)[4]

Vertical Deflection Oscillator and Amplifier[5]

	Tri. Osc.	Pent. Amp.
Plate Voltage	330	350 Volts Max.
Grid No. 2 Voltage	—	315 Volts Max.
Peak Positive Pulse Plate Voltage	—	2200 Volts Max.
Peak Negative Pulse Grid Voltage	400	275 Volts Max.
Plate Dissipation[6]	1.0	11 Watts Max.
Grid No. 2 Dissipation[6]	—	1.5 Watts Max.
Average Cathode Current	20	65 Ma Max.
Peak Cathode Current	70	230 Ma Max.
Grid Circuit Resistance		
Self Bias	2.2	2.2 Megohms Max.
Fixed Bias	2.2	2.2 Megohms Max.

AVERAGE CHARACTERISTICS

	Triode Section	Pentode Section
Plate Voltage	250	250 Volts
Grid No. 2 Voltage	—	250 Volts
Grid No. 1 Voltage	−3	−18 Volts
Plate Current	1.4	38 Ma
Grid No. 2 Current	—	3 Ma
Transconductance	2000	5100 μmhos
Amplification Factor	68	8.7
Plate Resistance (approx.)	34,000	55,000 Ohms
Ec for Ib = 20 μa (approx.)	−5	— Volts
Ec for Ib = 100 μa (approx.)	—	−39 Volts

Ib with Eb = 60 V, Ec2 = 250 V, and Ec = 0 V
(Instantaneous Values)[7]
Ib = 180 Ma and Ic2 = 30 Ma

NOTES:

1. For parallel heater operation, equipment should be so designed so that at normal supply voltage bogey tubes will operate at this value of heater voltage.
2. For series heater operation, equipment should be so designed so that at normal supply voltage bogey tubes will operate at this value of heater current.
3. Heater warm-up time is defined as the time required for the voltage across the heater to reach 80% of the rated heater voltage after applying four (4) times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to three (3) times the rated heater voltage divided by the rated heater current.
4. Design-Maximum Ratings are limiting values of operating and environmental conditions applicable to a bogey electron device of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.
   The device manufacturer chooses these values to provide acceptable serviceability of the device, taking responsibility for the effects of changes in operating conditions due to variations in device characteristics.
   The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey device under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, and environmental conditions.
5. For operation in a 525 line, 30 frame system as described in "Standards of Good Engineering Practice for Television Stations; Federal Communications Commission." The duty cycle of the voltage pulse must not exceed 15% of one scanning cycle.
6. In stages operating with grid leak bias, an adequate bias resistor or other suitable means is required to protect the tube in the absence of excitation.
7. Measurements of this characteristic must be made by a method, such that the tube is not damaged by plate or grid No. 2 dissipations in excess of the maximum ratings.

APPLICATION

The Sylvania Types 6HC8 and 17HC8 are triode-pentodes featuring the 9-T9 bulb and pin configuration. The 6HC8 and 17HC8 are intended to serve the combined functions of vertical deflection oscillator and amplifier.